DOCUMENT RESUME

ED 362 255 PS 021 168

TITLE	Bloodborne Pathogens Exposure Control Plan.
INSTITUTION	National Child Care Association, Atlanta, GA.
PUB DATE	92
NOTE	62p.
AVAILABLE FROM	National Child Care Association, 1029 Railroad Street, Conyers, GA 30207-5275 ($10).
PUB TYPE	Guides - Non-Classroom Use (055) -- Legal/Legislative/Regulatory Materials (090)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Communicable Diseases; Compliance (Legal); *Day Care Centers; *Disease Control; Early Childhood Education; *Federal Regulation; Health Materials; *Labor Standards; *Occupational Safety and Health
IDENTIFIERS	*Bloodborne Pathogens; *Occupational Safety and Health Administration

ABSTRACT

This sample exposure control plan is a guide to assist child care providers in complying with the blood-borne pathogens standard issued by the Occupational Safety and Health Administration (OSHA). The standard requires employers to establish a written exposure control plan by May 5, 1992 (for exposure to microorganisms in human blood that cause disease, such as hepatitis B or HIV). This sample plan is designed so that providers can add information relevant to their own centers. Requirements for exposure determination and for implementation schedule and methodology are outlined, covering the following areas: (1) compliance methods, (2) needles, (3) work area restrictions, (4) personal protective equipment, (5) regulated waste disposal, (6) laundry procedures, (7) hepatitis B vaccine, (8) post-exposure evaluation and follow-up, (9) interaction with health care professionals, (10) training, and (11) record keeping. Sample forms are included for first aid incidents involving the presence of blood or other potentially infectious material and for a post-exposure follow-up and evaluation by a health care provider. Appendices include a sample declination statement and a Center for Disease Control report reviewing Public Health Service post-exposure recommendations for workers at risk of acquiring HIV infection. An attached OSHA booklet provides additional information about the standard, including addresses and telephone numbers of regional OSHA offices. (MM)

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Bloodborne Pathogens Exposure Control Plan

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ED 362 255

PS 021168

On March 6, 1992, the Occupational Health and Safety Administration (OSHA) bloodborne pathogen standard became effective. Bloodborne pathogens are microorganisms in human blood that can cause disease in humans. They include the hepatitis B virus (HBV) and the human immunodeficiency virus (HIV), which causes AIDS. The standard covers employees who may be reasonably anticipated to come into contact with human blood and other potentially infectious materials in order to perform their jobs.

The standard requires employers to establish a written exposure control plan by May 5, 1992, identifying workers with occupational exposure to blood and other potentially infectious materials and specifying means to protect and train them.

Attached is a sample exposure control plan which was developed by NCCA using material provided by OSHA. **This sample plan is provided only as a guide to assist in complying with OSHA's bloodborne pathogens standard. It is not intended to supersede the requirements detailed in the standard. This exposure control plan is formatted so that providers can add information relevant to their particular center or centers in order to develop an effective, comprehensive exposure control plan.** Providers should note that the exposure control plan is expected to be reviewed at least on an annual basis and updated when necessary.

Below is a summary of the bloodborne pathogens standard effective dates.

May 5, 1992	Exposure control plans must be completed.
June 4, 1992	Initial information and training must take place.
July 6, 1992	Engineering and work practice controls, personal protective equipment, housekeeping, hepatitis B vaccination and post-exposure follow-up, and labels and signs must be in place.

Also enclosed is a booklet provided by OSHA, which will give you some additional information about the standard and the address and phone number of your regional OSHA office.

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BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN

Center Name: _____

Date of Preparation: _____

In accordance with the OSHA Bloodborne Pathogens standard, 29 CFR 1910.1030, the following exposure control plan has been developed:

1. Exposure Determination

OSHA requires employers to perform an exposure determination concerning which employees may incur occupational exposure to blood or other potentially infectious materials. The exposure determination is made without regard to the use of personal protective equipment (i.e., employees are considered to be exposed even if they wear personal protective equipment.) This exposure, determination is required to list all job classifications in which all employees may be expected to incur such occupational exposure, regardless of frequency. At this center the following job classifications are in this category:
(e.g., director, teacher, janitor, etc.)

2. Implementation Schedule and Methodology

OSHA requires that this plan also include a schedule and method of implementation for the various requirements of the standard. The following complies with this requirement:

A. Compliance Methods

Universal precautions will be observed at this center in order to prevent contact with blood or other potentially infectious materials. All blood or other potentially infectious material will be considered infectious regardless of the perceived status of the source individual.

Engineering and work practice controls will be utilized to eliminate or minimize exposure to employees at this center. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be utilized. At this center the following engineering controls will be utilized:
(list controls, such as needle containers, etc.)

The above controls will be examined and maintained on a regular schedule. The schedule for reviewing the effectiveness of the controls is as follows:
(list schedule such as daily, once/week, etc., as well as list who has the responsibility to review the effectiveness of the individual controls, such as the supervisor for each department, etc.)

Handwashing facilities are also available to the employees who incur exposure to blood or other potentially infectious materials. OSHA requires that these facilities be readily accessible after incurring exposure. At this center handwashing facilities are located:
(list locations)

Antiseptic towellettes should be kept in center vans and taken on any field trips. The lead teacher has the responsibility to ensure that these towellettes are maintained and accessible.

After removal of personal protective gloves, employees shall wash hands and any other potentially contaminated skin area immediately or as soon as feasible with soap and water.

If employees incur exposure to their skin or mucous membranes then those areas shall be washed or flushed with water as appropriate as soon as feasible following contact.

B. Needles

Contaminated needles will not be bent, recapped, removed, sheared or purposely broken. OSHA allows an exception to this if the procedure would require that the contaminated needle be recapped or removed and no alternative is feasible and the action is required by the medical procedure. If such action is required then the recapping or removal of the needle must be done by the use of a mechanical device or a one-handed technique.

C. Work Area Restrictions

In work areas where there is a reasonable likelihood of exposure to blood or other potentially infectious materials, employees are not to eat, drink, apply cosmetics or lip balm, smoke, or handle contact lenses. Food and beverages are not to be kept in refrigerators, freezers, shelves, cabinets, or on counter tops or bench tops where blood or other potentially infectious materials are present.

Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.

All procedures will be conducted in a manner which will minimize splashing, spraying, splattering, and generation of droplets of blood or other potentially infectious materials. Methods which will be employed at this center to accomplish this goal are:

D. Personal Protective Equipment

All personal protective equipment used at this center will be provided without cost to employees. Personal protective equipment will be chosen based on the anticipated exposure to blood or other potentially infectious materials. The protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or reach the employees' clothing, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used. Protective clothing will be provided to employees in the following manner: *(list how the clothing will be provided to employees, e.g., who has responsibility for distribution, etc. and also list which procedures would require the protective clothing and the type of protection required, this could also be listed as an appendix to this program)*

Personal Protective Equipment	Task	Individual Responsible for Distribution
Gloves	Diaper changing Cleaning up spills	Center Director

All personal protective equipment will be cleaned, laundered, or disposed of by the employer at no cost to employees. All repairs and replacements will be made by the employer at no cost to employees.

All garments which are penetrated by blood shall be removed immediately or as soon as feasible. All personal protective equipment will be removed prior to leaving the work area.

Gloves shall be worn where it is reasonably anticipated that employees will have hand contact with blood, other potentially infectious materials, non-intact skin, and mucous membranes. Gloves will be available from:
(state location and/or person who will be responsible for distribution of gloves)

Gloves will be used for the following procedures: Diaper changing, cleaning up blood spills, and applying first aid.

Disposable gloves used at this center are not to be washed or decontaminated for re-use and are to be replaced as soon as practical when they become contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised. Utility gloves may be decontaminated for re-use provided that the integrity of the glove is not compromised. Utility gloves will be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration, or when their ability to function as a barrier is compromised.

This center will be cleaned and decontaminated according to the following schedule:
(list area and schedule)

Decontamination will be accomplished by utilizing the following materials:
(list the materials which will be utilized, such as bleach solutions or registered germicides)

All contaminated work surfaces will be decontaminated after completion of procedures and immediately or as soon as feasible after any spill of blood or other potentially infectious materials, as well as the end of the work shift if the surface may have become contaminated since the last cleaning.
(providers should add in any information concerning the usage of protective coverings, such as plastic wrap which they may be using to assist in keeping surfaces free of contamination.)

All bins, pails, cans, and similar receptacles shall be inspected and decontaminated on a regularly scheduled basis.
(list frequency and by whom)

Any broken glassware which may be contaminated will not be picked up directly with the hands. The following procedures will be used:

E. **Regulated Waste Disposal**

Regulated Waste means "liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed (i.e., squeezed); items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated needles; and pathological and microbiological wastes containing blood or other potentially infectious materials." **It is our understanding that diapers are not considered "regulated waste" unless they contain blood or other potentially infectious materials.**

All contaminated needles shall be discarded as soon as feasible in needle containers which are located in the center. Needle containers are located in:
(specify locations of needle containers)

Regulated waste other than needles (e.g., broken glass) shall be placed in appropriate containers. Such containers are located in:
(specify locations of containers)

F. **Laundry Procedures**

Laundry contaminated with blood or other potentially infectious materials will be handled as little as possible. Such laundry will be placed in appropriately marked bags at the location where it was used. Such laundry will not be sorted or rinsed in the area of use.

All employees who handle contaminated laundry will utilize personal protective equipment to prevent contact with blood or other potentially infectious materials.

Laundry at this center will be cleaned at:
(providers should note here if the laundry is being sent off site. If the laundry is being sent off site, then the laundry service accepting the laundry is to be notified)

G. Hepatitis B Vaccine

Employees who render first aid only as a collateral duty responding solely to injuries resulting from workplace incidents need not receive a pre-exposure vaccination. However, the following conditions must be met: (1) a first aid incident report must be reported to the employer before the end of the work shift during which any blood-related incident occurs (See Appendix D); (2) the employer's training program must include the specifics of the reporting procedure; and (3) the full hepatitis B vaccination series must be offered no later than 24 hours after any blood-related incident, regardless of whether a specific "exposure incident," as defined by the statute, has occurred.

All employees who have been identified as having regular exposure to blood or other potentially infectious materials will be offered the hepatitis B vaccine, at no cost to the employee. The vaccine will be offered within 10 working days of their initial assignment to work involving the likelihood of regular occupational exposure to blood or other potentially infectious materials unless the employee has previously had the vaccine or wishes to submit to antibody testing which shows the employee to have sufficient immunity.

Employees who decline the hepatitis B vaccine will sign a waiver which uses the wording in Appendix A of the OSHA standard.

Employees who initially decline the vaccine but who later wish to have it may then have the vaccine provided at no cost.
(providers should list here who has responsibility for assuring that the vaccine is offered, the waivers are signed, etc. Also the providers should list who will administer the vaccine)

H. Post-Exposure Evaluation and Follow-Up

When the employee incurs an exposure incident, it should be reported to:
(list who has responsibility to maintain records of exposure incidents):

All employees who incur an exposure incident will be offered post-exposure evaluation and follow-up in accordance with the OSHA standard.

This follow-up will include the following:

1. The provider will document the route of exposure and the circumstances related to the incident.

2. If possible, the provider will document the identification of the source individual and, if possible, the status of the source individual. The blood of the source individual will be tested (after consent is obtained) for HIV/HBV infectivity.

3. The results of testing of the source individual will be made available to the exposed employee with the exposed employee informed about the applicable laws and regulations concerning disclosure of the identity and infectivity of the source individual.
(providers may need to modify this provision in accordance with applicable local laws on this subject. Modifications should be listed here:)

4. The employee, at the employer's expense, will be offered the option of having his/her blood collected for testing of the employee's HIV/HBV serological status. The blood sample will be preserved for at least 90 days to allow the employee to decide if the blood should be tested for HIV serological status. However, if the employee decides prior to that time that testing will be conducted, then the appropriate action can be taken and the blood sample discarded.

5. The employee will be offered post-exposure prophylaxis in accordance with the current recommendations of the U.S. Public Health Service. These recommendations are listed in Appendix B to this plan.

6. The employee will be given appropriate counseling concerning precautions to take during the period after the exposure incident. The employee will also be given information on what potential illnesses to be alert for and to report any related experiences to appropriate personnel.

7. The following person(s) has been designated to assure that the policy outlined here is effectively carried out as well as to maintain records related to this policy:
(list responsible individual)

I. Interaction with Health Care Professionals

A written opinion shall be obtained from the health care professional who evaluates employees of this center. Written opinions will be obtained in the following instances:

1. when the employee is sent to obtain the hepatitis B vaccine

2. whenever the employee is sent to a health care professional following an exposure incident

Health care professionals shall be instructed to limit their opinions to:

1. whether the hepatitis B vaccine is indicated and if the employee has received the vaccine, or for evaluation following an incident,

2. that the employee has been informed of the results of the evaluation, and

3. that the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials.
(note that the written opinion to the provider is not to reference any personal medical information)

J. Training

Training for all employees will be conducted prior to initial assignment to tasks where occupational exposure may occur. Training is required to be conducted during working hours, at no cost to the employee and at a reasonable location.

Training for employees will include an explanation of the following:

1. the OSHA standard for Bloodborne Pathogens

2. epidemiology and symptomatology of bloodborne diseases

3. modes of transmission of bloodborne pathogens

4. this Exposure Control Plan, i.e., points of the plan, lines of responsibility, how the plan will be implemented, etc.)

5. procedures which might cause exposure to blood or other potentially infectious materials at this center

6. control methods which will be used at the center to control exposure to blood or other potentially infectious materials

7. personal protective equipment available at this center and who should be contacted concerning it

8. post-exposure evaluation and follow-up

9. signs and labels used at the center

10. Hepatitis B vaccine program at the center

(providers should list here if training will be conducted using videotapes, written material, etc. The provider should also indicate who is responsible for conducting the training as well as the trainer's qualifications)

All employees will receive annual refresher training.
(note that this training is to be conducted within one year of the employee's previous training)

The outline for the training material is located:
(list where the training materials are located)

K. Recordkeeping

Providers are required to maintain medical records related to bloodborne pathogens, including exposure incidents, post exposure follow-up, hepatitis B vaccination status, and training for all employees with occupational exposure. These records are to be kept confidential and should be held for the duration of the employee's employment plus 30 years. Training records should be held for three years.

All records required by the OSHA standard will be maintained by:
(insert name or department responsible for maintaining records)

FIRST AID INCIDENTS
INVOLVING THE PRESENCE OF BLOOD
OR OTHER POTENTIALLY INFECTIOUS MATERIAL

1. a) Date of Incident:_____ b) Time of Incident:_____

   c) Location of Incident:_____

2. Name(s) of First Aid Provider(s) (regardless of whether personal protective equipment was used):

   _____

3. Description of the Circumstances of the Accident: (including routes of exposure and how exposure occurred, if appropriate):_____

   _____

4. Did an "Exposure Incident" occur?
   - O Yes (proceed to Question 5)
   - O No (proceed to Question 13)

5. Staff Member Exposed: _____

6. Name of Source Individual: _____

7. Source Individual's Blood Test. Was Consent Given? (Note: If Source Individual is known to be infected with HIV or HBV, testing need not be repeated.)
   - O Yes. Provide results of blood test: _____
   - O No.

     Name of legally responsible individual providing/denying (circle one) consent:_____

     Date: _____

8. Date the exposed staff member was provided with the source individual's test results and information about applicable disclosure laws and regulations concerning the source identity and infectious status:

   _____

9. Vaccination of Staff Member:

   Did staff member choose to be vaccinated?
   - O Yes. Provide vaccination information:_____

     _____
   - O No. Declinated form should be attached.

10. Staff Blood Sample/Test:

    a) Was consent given to test?

    O Yes. (Note: The exposed employee's blood should be collected as soon as feasible after the exposure incident and tested for HBV and HIV serological status.)

    1. Blood test performed by: _____
    2. Date: _____
    3. Results: _____

    (proceed to Question 11)

    O No.

    b) Did Staff Member consent to sample, but withhold consent for serological testing?

    O Yes. (Note: Hold baseline blood sample for at least 90 days. If, during this time, the exposed employee elects to have the baseline sample tested, testing shall be done as soon as feasible.)

    1. Sample taken by: _____
    2. Held at: _____
    3. Date of sample: _____

    O No. Staff member withheld consent for both sample and test.

11. Written Opinion from Health Care Professional

a) Does health care professional have a copy of OSHA standards?

O Yes.

O No.

1. Date provided: _____

b) Date that health care professional was provided with a description of the employee's job duties relevant to the exposure incident, all relevant employee medical records, and a copy of this report with Items 1 through 10 completed._____

c) Name, Address, and Telephone Number of Professional:

1. Name: _____

2. Address: _____

_____

3. Telephone: _____

d) Date Opinion Received: _____

e) Date Written Opinion Received by Employee (must be within 15 days of evaluation): _____

(Note: The written opinion should be limited to whether the vaccine is indicated, and if it has been received by the employee. The written opinion for post-exposure evaluation must document that the employee has been informed of the results of the medical evaluation and of any medical conditions resulting from the exposure incident that may require further evaluation or treatment. All other diagnoses must remain confidential and not be included in the written report.)

f) Follow-up information, if necessary: _____

_____

12. Counseling/Information for Staff Member

Was counseling accepted?

O Yes.

a) Nature of counseling/information provided: _____

_____

b) Individual and organization providing service(s): _____

c) Date(s): _____

O No.

Employee signature: _____

Date: _____

13. Additional information or comments. Please provide complete details, and refer to section number of this report, if appropriate: _____

_____

_____

_____

14. a) Individual completing report:_____

b) Title: _____

c) Date: _____

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WRITTEN OPINION OF HEALTH CARE PROVIDER
OSHA BLOODBORNE PATHOGEN STANDARD
POST-EXPOSURE FOLLOW-UP AND EVALUATION

1. Name of Patient: _____

2. Date of Examination: _____

3. Was the Hepatitis B Vaccination Recommended for the Exposed Patient?
   - ☐ Yes
   - ☐ No

4. Did the Patient Receive the Vaccination?
   - ☐ Yes
   - ☐ No

5. Provider Information (please print)

   Name: _____

   Address: _____

   _____

   Telephone: _____

   I hereby certify that the above referenced patient has been informed of the results of the medical evaluation and of any medical conditions resulting from the exposure incident.

6. Signature of Health Care Provider:

   _____

7. Date: _____

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Appendix A

Declination Statement

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

_____ _____

Employee Signature Date

H:\GGM\HBV

APPENDIX B

OSHA Instruction CPL 2-2.44C
MAR 6 1992
Office of Health Compliance Assistance

Centers for Disease Control
Atlanta, Georgia

Public Health Service Statement on Management of Occupational Exposure to Human Immunodeficiency Virus, Including Considerations Regarding Zidovudine Postexposure Use [Reprinted from *Morbidity and Mortality Weekly Report* 39(Suppl. RR-1):1–14, Jan. 26, 1990]

INTRODUCTION

CDC has issued guidelines to reduce the risk of human immunodeficiency virus (HIV) infection among health-care workers, emergency-response and public-safety workers, and others who might be exposed to HIV while performing job duties (*1–4*). The safety practices outlined in these guidelines remain the primary means of preventing occupational acquisition of HIV infection (*5*). Additionally, some physicians and some institutions have offered the option of using zidovudine (azidothymidine, AZT, ZDV, Retrovir) after occupational exposure to HIV (*6*). Data collected in an ongoing CDC surveillance project of health-care workers who have been occupationally exposed to blood from HIV-infected patients (*7*) indicate that during the period April–December 1989, 13 (8.6%) of 151 newly enrolled participants began a postexposure regimen of zidovudine.

This report reviews Public Health Service (PHS) recommendations for postexposure management of workers who have occupational exposures that may place them at risk of acquiring HIV infection, provides background information on zidovudine and experience with zidovudine postexposure prophylaxis, and presents considerations relevant to a decision to offer postexposure prophylaxis.

Definition of Occupational Exposure

For purposes of this document, an occupational exposure (i.e., exposure that occurs during the performance of job duties) that may place a worker at risk of HIV infection is defined as a percutaneous injury (e.g., a needlestick or cut with a sharp object), contact of mucous membranes, or contact of skin (especially when the exposed skin is chapped, abraded, or afflicted with dermatitis or the contact is prolonged or involving an extensive area) with blood, tissues, or other body fluids to which universal precautions apply, including: a) semen, vaginal secretions, or other body fluids contaminated with visible blood, because these substances have been implicated in the transmission of HIV infection (*2*); b) cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid, because the risk of transmission of HIV from these fluids has not yet been determined (*2*); and c) laboratory specimens that contain HIV (e.g., suspensions of concentrated virus).

PHS RECOMMENDATIONS FOR MANAGEMENT OF PERSONS AFTER OCCUPATIONAL EXPOSURES THAT MAY PLACE THEM AT RISK OF ACQUIRING HIV INFECTION

Employers should make available to workers a system for promptly initiating evaluation, counseling, and follow-up after a reported occupational exposure that may place the worker at risk of acquiring HIV infection. Workers should be educated to report exposures immediately after they occur, because certain interventions that may be appropriate, e.g., prophylaxis against hepatitis B, must be initiated promptly to be effective (*3,8,9*). Workers who might reasonably be considered at risk of occupational exposure to HIV should be familiarized with the principles of postexposure management as part of job orientation and ongoing job training.

If an exposure occurs, the circumstances should be recorded in the worker's confidential medical record. Relevant information includes the following:

- date and time of exposure
- job duty being performed by worker at time of exposure
- details of exposure, including amount of fluid or material, type of fluid or material, and severity of exposure (e.g., for a percutaneous exposure, depth of injury and whether fluid was injected; for a skin or mucous-membrane exposure, the extent and duration of contact and the condition of the skin, e.g., chapped, abraded, intact)
- description of source of exposure—including, if known, whether the source material contained HIV or HBV
- details about counseling, postexposure management, and follow-up

After an occupational exposure, both the exposed worker and the source individual should be evaluated to determine the possible need for the exposed worker to receive prophylaxis against hepatitis B according to previously published CDC recommendations (*3,8,9*). Because of the potentially severe consequences of hepatitis B virus infection, hepatitis B vaccine, which is both safe and highly effective (*10*), should be offered to any susceptible health-care worker who has an occupational exposure and has not previously been vaccinated with hepatitis B vaccine. Hepatitis B immune globulin may also be indicated, particularly if the source patient or material is found to be positive for hepatitis B surface antigen (HBsAg) (*3,8,9*).

In addition, the source individual should be informed of the incident and, if consent is obtained, tested for serologic evidence of HIV infection. If consent cannot be obtained (e.g., patient is unconscious), policies should be developed for testing source individuals in compliance with applicable state and local laws. Confidentiality of the source individual should be maintained at all times.

If the source individual has AIDS, is known to be HIV-seropositive, or refuses testing, the worker should be evaluated clinically and serologically for evidence of HIV infection as soon as possible after the exposure (baseline) and if seronegative, should be retested periodically for a minimum of 6 months after exposure (e.g., 6 weeks, 12 weeks, and 6 months after exposure) to determine whether HIV infection has occurred. The worker should be advised to report and seek medical evaluation for any acute illness that occurs during the follow-up period. Such illness, particularly if characterized by fever, rash, myalgia, fatigue, malaise, or lymphadenopathy, may be indicative of acute HIV infection, drug reaction, or another medical condition. During

the follow-up period, especially the first 6-12 weeks after the exposure when most infected persons are expected to seroconvert, exposed workers should follow PHS recommendations for preventing transmission of HIV. These recommendations include refraining from blood, semen, or organ donation and abstaining from or using measures to prevent HIV transmission during sexual intercourse (*11-14*). In addition, in countries such as the United States where safe and effective alternatives to breast-feeding are available, exposed women should not breast-feed infants during the follow-up period in order to prevent the infant's possible exposure to HIV in breast milk. During all phases of follow-up, confidentiality of the worker should be protected.

If the source individual is HIV-seronegative and has no clinical manifestations of AIDS or HIV infection, no further HIV follow-up of the exposed worker is necessary unless epidemiologic evidence suggests that the source individual may have recently been exposed to HIV or if testing is desired by the worker or recommended by the health-care provider. In these instances, the guidelines may be followed as described above.

If the source individual cannot be identified, decisions regarding appropriate follow-up should be individualized, based on factors such as whether potential sources are likely to include a person at increased risk of HIV infection.

The employer should make serologic testing available to all workers who are concerned about possible infection with HIV through an occupational exposure. Appropriate psychological counseling may be indicated as well.

ZIDOVUDINE

Background

Zidovudine is a thymidine analogue that has been shown in vitro to inhibit replication of some retroviruses, including HIV, by interfering with the action of viral ribonucleic acid (RNA)-dependent deoxyribonucleic acid (DNA) polymerase (reverse transcriptase) and possibly also by other mechanisms (*15*).

In a double-blind, placebo-controlled trial, zidovudine was shown to increase the length and quality of life of patients with advanced HIV infection and AIDS (*16*). Largely on the basis of the results of this trial, zidovudine was approved for marketing by the Food and Drug Administration (FDA) and is indicated for treatment of adults with symptomatic HIV infection, including AIDS, who have a history of cytologically confirmed *Pneumocystis carinii* pneumonia or an absolute CD_4 lymphocyte count of $<200/mm^3$. The dose of zidovudine originally approved for oral use by patients who have AIDS and advanced symptomatic HIV infection was 200 mg every 4 hours. On January 16, 1990, FDA approved a change in the labeling that now recommends administering the drug at 600 mg/day (100 mg every 4 hours) after a patient has received 1 month of zidovudine therapy at a dose of 1,200 mg/day (200 mg every 4 hours).

Later studies (National Institute of Allergy and Infectious Diseases (NIAID) AIDS Clinical Trial Group Protocols #016 and #019) have indicated that zidovudine can delay disease progression in patients with less advanced HIV infection (patients with an absolute CD_4 count of $<500/mm^3$, whether symptomatic or asymptomatic) (NIAID Administrative Report: "AIDS Clinical Trials Alert August 29, 1989).

Toxicity

Among patients who have AIDS or symptomatic HIV infection and who are treated with zidovudine, the most frequently reported adverse events are granulocytopenia and anemia. Other adverse events that affect ≥5% of zidovudine recipients include one or more of the following: headache, nausea, insomnia, myalgia, diaphoresis, fever, malaise, anorexia, diarrhea, dyspepsia, vomiting, dyspnea, rash, and taste abnormalities (17). Occurrences less commonly reported in the published literature include polymyositis, peripheral neuropathy, and seizures.

Among 3,200 patients with asymptomatic HIV infection treated in NIAID protocol #019 with placebo or with zidovudine doses of either 1,500 mg or 500 mg daily (either 300 mg or 100 mg given every 4 hours, five times daily), investigators have reported the following toxicity after a median of 44 weeks of therapy: in the 1,500-mg/day group, approximately 12% of the subjects developed moderate to severe hematologic toxicity, defined as hemoglobin of <8 g/dl, granulocytes of <750/mm^3, or platelets of <50,000/mm^3. In the 500-mg/day group, this toxicity occurred at a rate of about 3%, compared with approximately 2% in the placebo group. Nausea was rarely reported in the placebo group; however, 3%-5% of zidovudine recipients, irrespective of dose group, experienced moderate to severe nausea. No statistically significant difference was observed between zidovudine dose and placebo for any other moderate to severe clinical adverse experiences (NIAID Administrative Report: "AIDS Clinical Trials Alert," August 29, 1989).

Preliminary data from a study sponsored by the Burroughs-Wellcome Company of health-care workers who received 200 mg of zidovudine or placebo every 4 hours for 6 weeks after occupational exposure to HIV indicate that adverse effects most frequently consisted of nausea and vomiting. In no instance did the prescribing physician discontinue a participant's study drug or placebo because of hematologic or other serious toxicity; however, during the therapy period, 14 (28.6%) of 49 participants who received zidovudine had a hemoglobin concentration between 9.5 and 12 g/dl, compared with one (2.9%) of 35 participants in the placebo group. Seven (14.3%) of the 49 participants who received zidovudine, compared with one (2.9%) of the 35 placebo recipients, elected to discontinue therapy because of subjective, reversible symptoms, including nausea, vomiting, fatigue, headache, myalgia, or cough.

Several anecdotal reports of short-term toxicity among health-care workers receiving zidovudine have been received by PHS. Symptoms include fever, myalgia, fatigue, nausea, and vomiting. Single reports have been received of severe anemia, reversible peripheral neuropathy, and transient clinical hepatitis.

Although the risk of acute zidovudine toxicity for exposed health-care workers cannot be determined from this limited information, data from the NIAID protocol #019 trial and from the Burroughs-Wellcome study of exposed health-care workers suggest that the risk of acute toxicity associated with short-term use of the drug is lower than the risk observed during long-term therapy of symptomatic HIV-infected individuals.

For healthy persons not infected with HIV, the risk of long-term toxicity, including teratogenic and carcinogenic effects, related to a course of zidovudine is not known. It is not known whether zidovudine can cause fetal harm when administered to a pregnant woman or whether it can affect reproductive capacity (17). To assess the

safety of zidovudine use during pregnancy, the Burroughs-Wellcome Company has developed a registry to evaluate pregnancy outcomes of women who took zidovudine during pregnancy. Physicians are encouraged to register such persons by telephoning the pregnancy registry, (919) 248-8465 (collect) or 1-800-722-9292. It is also not known whether zidovudine is excreted in human milk. However, because of the potential for adverse side effects among breast-fed infants, as well as the potential for transmission of HIV if the mother is infected, mothers should be instructed to discontinue breast-feeding whether or not they are receiving zidovudine (*17*).

In other studies conducted by the Burroughs-Wellcome Company (Appendix I), vaginal tumors, including carcinomas, were observed in mice and rats receiving zidovudine at doses that the FDA has determined resulted in plasma levels in mice approximately equal to human plasma levels at the dose originally approved for treatment of persons with symptomatic HIV infection (200 mg every 4 hours). In rats, the plasma levels were determined by the FDA to be about 10 times higher than human plasma levels achieved with the originally approved dose. The results of these rodent carcinogenicity studies are of uncertain predictive value for humans.

Studies of Zidovudine Postexposure Prophylaxis Involving Animals

Data involving studies of laboratory animals (Appendix II) are limited and must be interpreted with caution, as they have most often been derived by using nonhuman retroviruses having pathogenic mechanisms different from the pathogenesis of HIV infection in humans. In one study using HIV in a mouse model, zidovudine prophylaxis was begun 24 hours before intrathymic injection of a large inoculum of HIV and continued for 2 weeks thereafter. HIV infection was not prevented in any of the animals studied, although the course of infection was modified. It is not known whether prophylaxis would be effective in conditions that more closely resemble occupational exposures, i.e., zidovudine begun after exposure, with the exposure consisting of a percutaneous injection of a lower inoculum of HIV. Data from animal studies are inadequate to support or reject the hypothesis that zidovudine may be effective prophylaxis for persons who have been occupationally exposed to HIV.

Studies of Zidovudine Postexposure Prophylaxis Involving Humans

The efficacy of zidovudine prophylaxis for humans after exposure to HIV cannot be assessed because of insufficient data. The Burroughs-Wellcome Company recently sponsored a double-blind, placebo-controlled study to evaluate 6 weeks of zidovudine prophylaxis (200 mg orally every 4 hours) involving health-care workers who had experienced occupational percutaneous, mucous-membrane, or nonintact-skin exposures to HIV-infected blood. Of 84 workers who initially enrolled in the study (49 of whom were given zidovudine), none developed HIV infection after at least 6 months of follow-up. The risk of transmission of HIV per episode of percutaneous exposure to HIV-infected blood is, on the average, approximately 0.4% (*7*). Thus, the absence of seroconversions in this small group of participants is not unexpected, regardless of whether they took zidovudine. Enrollment in this study was terminated in June 1989.

NIAID has enrolled three persons in an ongoing open trial of zidovudine prophylaxis after a "massive exposure" to HIV. The first person received a blood transfusion from an HIV-infected donor, was started on zidovudine 7 days after exposure, and

was culture-positive for HIV 4 months after completing 6 weeks of chemotherapy. The second person was exposed to a high concentration of HIV on abraded skin in a research laboratory, was started on zidovudine within 24 hours postexposure, and remains HIV-seronegative after 11 months. The risk of seroconversion after this type of laboratory exposure is unknown. The third person was exposed to a high concentration of HIV on broken skin in a research laboratory, was started on zidovudine within 24 hours after the exposure, and is HIV-seronegative 3 months after the exposure. The risk of seroconversion after this type of laboratory exposure also is unknown. All individuals were able to complete a 6-week course of therapy (200 mg orally every 4 hours) without clinically significant adverse effects. Information regarding enrollment in this study can be obtained by calling the NIAID study coordinator at (800) 537-9978.

Prophylaxis Schedules Currently Used After Occupational Exposure

Various regimens have been prescribed for zidovudine prophylaxis after occupational exposure. No data are available to enable investigators to determine the efficacy or compare the toxicity of these or other regimens. At the National Institutes of Health Clinical Center, workers who elect to receive zidovudine are treated with 200 mg every 4 hours (six times daily) for 6 weeks (*6*). At San Francisco General Hospital, workers who elect to receive zidovudine are treated with 200 mg every 4 hours (five times daily; no dose is given at 4:00 a.m.) for 4 weeks (*6*). Some clinicians have used an initial dose of 400 mg, and others have prescribed treatment courses ranging from 4 days to 4 months. At several institutions, attempts are made to begin prophylaxis within 1 hour after exposure for workers who elect to receive the drug.

DISCUSSION

Data from animal and human studies are inadequate to establish the efficacy or safety of zidovudine for prophylaxis after occupational exposure to HIV. However, some physicians believe that zidovudine should be offered as prophylaxis to persons after certain occupational exposures for the following reasons: the severity of the illness that may result from HIV infection, the documented antiviral effect of zidovudine in the treatment of persons with established HIV infection, the apparent reversibility of acute toxicity in persons taking zidovudine for a brief period, and the suggestion that in some animal studies, zidovudine postexposure may modify the course of some retroviral infections. Other physicians believe that zidovudine should not be recommended for uninfected persons after occupational exposures because of the lack of data demonstrating efficacy in postexposure prophylaxis, the limited data on toxicity in uninfected individuals, and the fact that zidovudine has been shown to be carcinogenic in rats and mice.

At this time, prophylaxis with zidovudine cannot be considered a necessary component of postexposure management. However, workers who might be at risk of occupational exposure to HIV should be informed, as part of job orientation and ongoing job training, of the considerations pertaining to the use of zidovudine for postexposure prophylaxis. The PHS recommends that if a physician decides to offer zidovudine to a worker after an exposure incident, that decision by the physician and the decision by the worker to take zidovudine should take into account the following considerations.

Considerations Regarding Use of Zidovudine After an Occupational Exposure

Risk of HIV infection after exposure

Evaluation of the risk of HIV infection after exposure should take into account existing knowledge from prospective studies of exposed workers, which demonstrate that on the average the risk of transmission of HIV per episode of percutaneous exposure (e.g., a needlestick or cut with a sharp object) to HIV-infected blood is approximately 0.4%. These studies also suggest that the risk of HIV transmission per episode of mucous-membrane or skin exposure to HIV-infected blood is less than that after a percutaneous exposure (*7,18-21*). The risk of HIV transmission after occupational exposure to body fluids other than blood, for which universal precautions are recommended, is unknown. The risk of HIV infection for persons who take zidovudine postexposure prophylaxis cannot be determined at present because of the small number of persons studied.

Risk evaluation should also include an assessment of factors that may increase or decrease the probability of HIV transmission after an individual occupational exposure. These factors are not well understood, but include the likelihood that the source fluid contained HIV and probably also the concentration of HIV in the source fluid, the route of exposure, and the volume of fluid involved. For example, a percutaneous exposure to concentrated HIV in a research laboratory is probably more likely to result in transmission of infection than a similar exposure to HIV-infected blood in a clinical setting. A percutaneous exposure to HIV-infected blood is probably more likely to result in transmission than a mucous-membrane exposure to the same blood. Finally, an exposure to a larger quantity of HIV-infected blood, such as injection of several milliliters, is probably more likely to result in HIV transmission than an exposure to a smaller quantity of the same blood, such as in a needlestick exposure.

Interval between exposure and initiation of prophylaxis, if given

Data from animal studies suggest that prophylaxis against certain retroviral infections other than HIV may be more effective when started within hours after exposure (*22,23*). Because in vitro studies indicate that human HIV infection may be established in human lymphocytes within hours after exposure (*24*), and epidemiologic studies of exposed health-care workers indicate that acute retroviral illness may occur as early as 2 weeks after exposure (*7*), it appears that if the decision is made to use postexposure prophylaxis, prophylaxis should be initiated promptly.

Counseling and informed consent

If zidovudine prophylaxis is being considered, the worker should be counseled regarding a) the theoretical rationale for postexposure prophylaxis, b) the risk of occupationally acquired HIV infection due to the exposure, c) the limitations of current knowledge of the efficacy of zidovudine when used as postexposure prophylaxis, d) current knowledge of the toxicity of zidovudine (including the data from animal and human studies) and the limitations of this knowledge in predicting toxicity in uninfected individuals who take the drug after occupational exposures, and e) the need for postexposure follow-up (including HIV serologic testing), regardless of whether zidovudine is taken. The worker should also be informed that there are diverse opinions among physicians regarding the use of zidovudine for postexposure

prophylaxis, and the PHS cannot make a recommendation for or against the use of zidovudine for this purpose because of the limitations of current knowledge.

The duration of follow-up needed to detect evidence of HIV transmission or delayed toxicity among workers who take zidovudine is presently unknown. Workers taking zidovudine postexposure may require follow-up to detect HIV seroconversion for a longer period than that recommended for workers who do not take zidovudine. Regardless of the length of follow-up, mechanisms should be developed to permit workers taking zidovudine to be contacted if future information indicates the need for additional evaluation.

If a physician offers zidovudine as prophylaxis after an occupational exposure and the exposed worker elects to take the drug, the physician or other appropriate health-care provider should obtain written informed consent from the worker for this use of this drug. The consent document should reflect the information presented in the counseling session, as outlined above, emphasizing the need for follow-up medical evaluations and for precautions to prevent the transmission of HIV infection during the follow-up period, including refraining from blood, semen, or organ donation, refraining from breast-feeding, and either abstaining from sexual intercourse or using latex condoms during sexual intercourse, as discussed below.

Considerations regarding sexual intercourse for exposed workers taking zidovudine include 1) the possible risk of teratogenesis associated with zidovudine use, and 2) the risk of transmission of HIV to a sexual partner. The risk of teratogenesis among offspring of either men or women taking zidovudine is unknown. Therefore, men and women of reproductive age who are receiving zidovudine should abstain from, or use effective contraception during, sexual intercourse throughout the time zidovudine is being taken. In addition, to prevent HIV transmission to sexual partners, all exposed workers, including pregnant women, should abstain from, or use latex condoms during, sexual intercourse throughout the follow-up period.

Research Needs

Further data are needed to determine risk factors for occupational exposure to HIV, to evaluate measures for preventing these exposures, and to identify risk factors for HIV transmission after occupational exposure. Appropriate animal models of HIV infection are needed, and animal studies should be conducted under experimental conditions that mimic the circumstances of occupational exposure affecting humans. Studies involving humans should be conducted to determine whether postexposure prophylaxis with zidovudine or other agents is effective, and, if effective, should define the optimal time that postexposure prophylaxis should be initiated and the optimal duration of prophylaxis. Studies should also assess the toxicity of candidate prophylactic agents, establish the optimal dosage for healthy individuals and for persons with preexisting hepatic or renal dysfunction, and define the duration of follow-up needed to detect evidence of HIV infection in persons receiving prophylaxis. Strains of HIV isolated from treated workers should be monitored to detect development of drug resistance.

Expanded Surveillance of Workers with Occupational Exposures to HIV

CDC has expanded its ongoing surveillance of workers with occupational exposures to HIV (*7*) to collect additional information on postexposure chemoprophylaxis. No names or other personal identifiers of workers are collected.

Information is collected on the following:

- circumstances associated with exposures
- extent to which zidovudine and other antiretroviral agents are prescribed for postexposure chemoprophylaxis, including dosage and timing
- incidence of associated toxicity
- rate of HIV seroconversion among workers who do and do not receive postexposure chemoprophylaxis

All physicians who provide care to a worker within 1 month after an occupational exposure to HIV, regardless of whether an antiretroviral agent is prescribed, are encouraged to enroll the worker in the CDC surveillance system. Enrollment and follow-up requirements have been simplified; in particular, it is no longer necessary to send blood specimens to CDC for HIV serologic testing unless the enzyme immunoassay (EIA) performed by a licensed local laboratory is reactive or equivocal. CDC will continue, however, to offer EIA testing at no charge on specimens from surveillance participants on request. Additional information and enrollment materials can be obtained from the Hospital Infections Program, Center for Infectious Diseases, Centers for Disease Control, Mail Stop C-10, Atlanta, GA 30333; telephone (404) 639-1644.

CONTACTS FOR PHYSICIANS AND FOR INFECTION CONTROL AND OCCUPATIONAL HEALTH PROFESSIONALS

- To enroll persons who have had a "massive exposure" to HIV in NIAID study of zidovudine prophylaxis, telephone (800) 537-9978.
- To report adverse effects associated with zidovudine to FDA, use "Adverse Reaction Report" forms (FDA #1639), obtainable from:
  Food and Drug Administration
  Office of Epidemiology and Biostatistics
  HFD-730
  Rockville, MD 20857
  (301) 443-4580.
- To enroll an exposed worker in the CDC prospective surveillance system, telephone (404) 639-1644.
- To enroll pregnant women who receive zidovudine during pregnancy, contact:
  Zidovudine in Pregnancy Registry
  Epidemiology, Information, and Surveillance Division
  Burroughs-Wellcome Company
  3030 Cornwallis Road
  Research Triangle Park, NC 27709
  (919) 248-8465 (collect) or (800) 722-9292.

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Occupational Exposure to Bloodborne Pathogens

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OSHA 3127
1992

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Introduction

Acquired Immunodeficiency Syndrome (AIDS) and Hepatitis B merit serious concern for workers occupationally exposed to blood, other potentially infectious materials, and certain other body fluids that contain bloodborne pathogens such as the human immunodeficiency virus (HIV), and the Hepatitis B virus (HBV). According to Occupational Safety and Health Administration (OSHA) estimates, more than 5.6 million workers in health care and public safety occupations could be potentially exposed to these viruses.*

These workers include, but are not limited to, physicians, dentists, dental employees, phlebotomists, nurses, morticians, paramedics, medical examiners, laboratory and blood bank technologists and technicians, housekeeping personnel, laundry workers, employees in long-term care facilities, and home care workers. Other workers who may be occupationally exposed to blood or other potentially infectious materials, depending on their work assignments, include research laboratory workers, and public safety personnel (fire, police, rescue, correctional officers, etc.).

Exposure to bloodborne pathogens may occur in many ways. Although needlestick injuries are the most common means of exposure for health care workers, bloodborne pathogens also can be transmitted through contact with the mucous membranes and non-intact skin of workers.

OSHA recognizes the need for a regulation that prescribes safeguards to protect workers against the health hazards related to bloodborne pathogens. Thus, with the full implementation of its standard, OSHA aims to reduce the risk of occupational exposure to bloodborne diseases.

This standard, Part 1910.1030 of Title 29 of the *Code of Federal Regulations*, was published in the *Federal Register* on December 6, 1991, (29 CFR 1910.1030) and becomes effective on March 6, 1992 (see Table 1 for compliance calendar).

*OSHA, Office of Regulatory Analysis, 1991

Table 1. Compliance Calendar

Effective Date of the Standard	3/6/92
Exposure Control Plan	5/5/92
Information and Training of Employee Hazard Communication	6/4/92
Recordkeeping	6/4/92
Engineering/Work Practices	7/6/92
Personnel Protective Equipment	7/6/92
Hepatitis B Vaccination and Post-Exposure Followup	7/6/92
Labels and Signs	7/6/92
Housekeeping	7/6/92
Other Provisions	7/6/92

Federal OSHA authority extends to all private sector employers with one or more employees, as well as federal civilian employers. States administering their own occupational safety and health programs through plans approved under section 18(b) of the Occupational Safety and Health (OSH) Act of 1970 must adopt standards and enforce requirements that are at least as effective as federal requirements. Of the 25 current state plan states and territories, 23 cover the private and public (i.e., state and local governments) sectors, and 2 cover the public sector only (see listing at the end of this booklet).

This booklet provides an overview of OSHA's bloodborne pathogens standard and informs employees and employers of the risks of occupational exposure to bloodborne pathogens and how to reduce these risks. This booklet is not intended to be used as a substitute for the standard's requirements or for those of the OSH Act. Please refer to the standard (*Title 29 Code of Federal Regulations*, Part 1910.1030 for the complete text.

Who Is Covered?

OSHA's rule applies to all persons occupationally exposed* to blood or other potentially infectious materials. Blood means human blood, blood products or blood components. Other potentially infectious materials include the following: (1) human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) any unfixed tissue or organ (other than intact skin) from a human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV or HBV-containing culture medium or other solutions as well as blood, organs, or other tissues from experimental animals infected with HIV or HBV.

The bloodborne pathogens standard identifies how to determine who has occupational exposure and how to reduce workplace exposure to

*Occupational exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of the employees duties.

bloodborne pathogens. Preventive measures and other requirements of the standard are described in the following paragraphs.

Exposure Control Plan

The standard requires the employer to develop a written exposure control plan. At a minimum, the exposure control plan must include (1) the exposure determination, (2) the procedures for evaluating the circumstances surrounding an exposure incident, and (3) the schedule and method for implementing sections of the standard covering the methods of compliance, HIV and HBV research laboratories and production facilities, hepatitis B vaccination and post-exposure followup, communication of hazards to employees, and recordkeeping. The schedule of how and when the provisions of the standard will be implemented may be as simple as a calendar with brief notations describing the methods of implementation, and an annotated copy of the standard.

The plan must be reviewed, updated at least annually or whenever new tasks and procedures affect occupational exposure, made accessible to employees (in accordance with *Title 29 Code of Federal Regulations*, Part 1910.20(e), *Access to Employee Exposure and Medical Records*) and made available to the Assistant Secretary for OSHA and to the Director of the National Institute for Occupational Safety and Health (NIOSH) for examination and copying.

Who Has Occupational Exposure?

The exposure determination must be based on the definition of occupational exposure **without regard to personal protective clothing and equipment**. The exposure determination is made by reviewing job classifications within the work environment, and listing exposures into two groups. The first group includes job classifications in which all of the employees have occupational exposure, such as operating room scrub nurses. Where *all* employees have occupational exposure, it is not necessary to list specific work tasks. The second group includes those classifications in which *some* of the employees have occupational exposure.

Where only some employees have occupational exposure, specific tasks and procedures causing occupational exposure must be listed. An example would be in a hospital's laundry where some of the workers might be assigned the task of handling contaminated laundry while others would not. When employees with occupational exposure have been identified, the next step is to communicate the hazards to these employees.

Communicating Hazards to Employees

By June 4, 1992, each occupationally exposed employee must be given information and training. Information and training must be provided at no cost to the employee, at the time of initial assignment, during working hours, and at least once a year thereafter. Additional training is needed when existing tasks are modified or new tasks that involve occupational exposure to bloodborne pathogens affect the employee's exposure. Persons conducting training must be knowledgeable about the subject matter, and the information provided must be appropriate in content and vocabulary to the educational level, literacy, and language of the audience, and must contain the following elements:

- How to obtain a copy of the regulatory text and an explanation of its contents;
- Information on the epidemiology and symptoms of bloodborne diseases;
- Ways in which bloodborne pathogens are transmitted;
- Explanation of the exposure control plan and how to obtain a copy;
- Information on how to recognize tasks that might result in occupational exposure;
- Explanation of the use and limitations of work practice and engineering controls, and personal protective equipment;
- Information on the types, selection, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment;

- Information on hepatitis B vaccination such as safety, benefits, efficacy, methods of administration, and availability;
- Information on who to contact and what to do in an emergency;
- Information on how to report an exposure incident and on the post-exposure evaluation and followup;
- Information on warning labels, and signs, where applicable, and color-coding; and
- Question and answer session on any aspect of the training.

Additional training in standard microbiological practices and techniques, practices and operations specific to the facility, and the proper handling of human pathogens or tissue cultures is required for employees who work in HIV and HBV laboratories and production facilities. This additional training must be given before beginning initial work assignments.

Preventive Measures

Hepatitis B Vaccination

The employer must make the hepatitis B vaccine and vaccination series available to all employees who have occupational exposure as well as provide a post-exposure evaluation and followup to all employees who experience an exposure incident. The vaccine and vaccinations, as well as all medical evaluations and followup must be made available at no cost to the employee, provided at a reasonable time and place, and performed by or under the supervision of a licensed physician or another licensed health care professional whose scope of practice allows him or her to independently perform activities required by paragraph (f) of the standard (such as a nurse practitioner). Vaccinations also must be administered according to current recommendations of the U.S. Public Health Service. Employees who decline the vaccination must sign a declination form (see Appendix A). The employee may request and obtain the vaccination at a later date and at no cost, if he/she continues to be exposed.

The hepatitis B vaccine and vaccination series must be offered within 10 working days of initial assignment to employees who have occupational exposure to blood or other potentially infectious materials unless (1) the employee has previously received the complete hepatitis B vaccination series, (2) antibody testing reveals that the employee is immune, or (3) medical reasons prevent taking the vaccinations. Prescreening is not required before receiving the hepatitis B vaccination series.

The employer must obtain and provide the employee with a copy of the health care professional's written opinion stating whether a hepatitis B vaccination is indicated for the employee and whether the employee has received such vaccination.

Any booster doses of the hepatitis B vaccine recommended by the U.S. Public Health Service also must be provided.

Universal Precautions

Universal precautions must be observed. This method of infection control requires the employer and employee to assume that all human blood and specified human body fluids are infectious for HIV, HBV, and other bloodborne pathogens. Where differentiation of types of body fluids is difficult or impossible, all body fluids are to be considered as **potentially infectious**.

Methods of Control

Engineering and Work Practice Controls

Engineering and work practice controls are the primary methods used to prevent occupational transmission of HBV and HIV. Personal protective clothing and equipment also are necessary when occupational exposure to bloodborne pathogens remains even after instituting these controls.

Engineering controls reduce employee exposure in the workplace by either removing or isolating the hazard or isolating the worker from exposure. Self-sheathing needles, puncture-resistant disposal containers for contaminated sharp instruments, resuscitation bags,

and ventilation devices are examples of engineering controls. Engineering controls must be examined and maintained or replaced on a scheduled basis.

Proper **work practice controls** alter the manner in which a task is performed. In work areas where a reasonable likelihood of occupational exposure exists, work practice controls include restricting eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses; prohibiting mouth pipetting; preventing the storage of food and/or drink in refrigerators or other locations where blood or other potentially infectious materials are kept; providing and requiring the use of handwashing facilities; and routinely checking equipment and decontaminating it prior to servicing and shipping. Other work practice requirements include, but are not limited to, the following:

- Washing hands when gloves are removed and as soon as possible after skin contact with blood or other potentially infectious materials occurs.

- Recapping, removing or bending needles is prohibited unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical procedure. When recapping, bending or removing contaminated needles is required by a medical procedure, this must be done by mechanical means, such as the use of forceps, or a one-handed technique.

- Shearing or breaking contaminated needles is not permitted.

Personal Protective Equipment

Personal protective equipment also must be used if occupational exposure remains after instituting engineering and work practice controls, or if those controls are not feasible.

The use of **personal protective equipment** helps prevent occupational exposure to infectious materials. Such equipment includes, but is not limited to, gloves, gowns, laboratory coats, face shields or masks, and eye protection. Personal protective equipment is considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or reach employees'

work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

Under the standard, employers must provide, make accessible, and require the use of personal protective equipment at no cost to the employee. Personal protective equipment also must be provided in appropriate sizes. Hypoallergenic gloves or other similar alternatives must be made available to employees who have an allergic sensitivity to gloves. Employers also must ensure that protective equipment is properly used, cleaned, laundered, repaired or replaced, as needed, or discarded.

An employee may temporarily and briefly decline wearing personal protective equipment under rare and extraordinary circumstances and when, in the employee's professional judgment, it prevents the delivery of health care or public safety services or poses an increased hazard to workers. These circumstances would be expected to be life threatening. In general, appropriate personal protective equipment is expected to be used whenever occupational exposure may occur.

The employer also must ensure that employees observe the following precautions for safely handling and using personal protective equipment:

- Remove protective equipment before leaving the work area and after a garment becomes contaminated.

- Place used protective equipment in appropriately designated areas or containers when being stored, washed, decontaminated, or discarded.

- Wear appropriate gloves when it can be reasonably anticipated that the employee may have contact with blood, other potentially infectious materials; when performing vascular access procedures,* and when handling or touching contaminated items or surfaces. Replace gloves if

*Some exceptions are made for voluntary blood donation centers. See Section (d)(3)(ix)(D) of the Bloodborne Pathogens Standard for clarification.

torn, punctured, contaminated, or their ability to function as a barrier is compromised.

- Utility gloves may be decontaminated for reuse if their integrity is not compromised. Discard utility gloves when they show signs of cracking, peeling, tearing, puncturing, or deteriorating.

- Never wash or decontaminate disposable gloves for reuse.

- Wear appropriate face and eye protection such as a mask with glasses with solid side shields or a chin-length face shield when splashes, sprays, spatters, or droplets of blood or other potentially infectious materials pose a hazard to the eye, nose, or mouth.

- Wear appropriate protective body coverings such as gowns, aprons, caps, and boots when occupational exposure is anticipated. The type and characteristics will depend upon the task and degree of exposure anticipated.

Housekeeping

Under the standard, each place of employment must be kept clean and sanitary. To do this, the employer must develop and implement a cleaning schedule that includes appropriate methods of decontamination and tasks or procedures to be performed. This written schedule must be based on the location within the facility, the type of surfaces to be cleaned, the type of contamination present, the tasks or procedures to be performed, and their location within the facility.

The employer also must ensure that the following housekeeping procedures are followed:

- Clean and decontaminate all equipment and environmental and work surfaces that have been contaminated with blood or other potentially infectious materials.

- Decontaminate work surfaces with an appropriate disinfectant, after completion of procedures, immediately when overtly contaminated, after any spill of blood or other

potentially infectious materials, and at the end of the work shift when surfaces have become contaminated since the last cleaning.

- Remove and replace protective coverings such as plastic wrap and aluminum foil when contaminated.

- Inspect and decontaminate, on a regular basis, reusable receptacles such as bins, pails, and cans that have a likelihood for becoming contaminated. When contamination is visible, clean and decontaminate receptacles immediately, or as soon as feasible.

- Always use mechanical means such as tongs, forceps, or a brush and a dust pan to pick up contaminated broken glassware; never pick up with hands even if gloves are worn.

- Store or process reusable sharps in a way that ensures safe handling.

- Place other regulated waste* in closable and labeled or color-coded containers. When storing, handling, transporting or shipping, place other regulated waste in containers that are constructed to prevent leakage.

- When discarding contaminated sharps, place them in containers that are closable, puncture-resistant, appropriately labeled or color-coded, and leakproof on the sides and bottom.

- Ensure that sharps containers are easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found. Sharps containers also must be kept upright throughout use, replaced routinely, closed when moved, and not allowed to overfill.

*Liquid or semi-liquid blood or other potentially infectious materials; items contaminated with blood or other potentially infectious materials that would release these substances in a liquid or semi-liquid state if compressed; items caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

- Never manually open, empty, or clean reusable contaminated sharps disposal containers.
- Discard all regulated waste according to federal, state, and local regulations.
- Handle contaminated laundry as little as possible and with a minimum of agitation.
- Use appropriate personal protective equipment when handling contaminated laundry.
- Place wet contaminated laundry in leak-proof, labeled or color-coded containers before transporting.
- Bag contaminated laundry at its location of use.
- Never sort or rinse contaminated laundry in areas of its use.

Labeling

The standard requires that fluorescent orange or orange-red warning labels be attached to containers of regulated waste, to refrigerators and freezers containing blood and other potentially infectious materials, and to other containers used to store, transport, or ship blood or other potentially infectious materials (see Table 2). These labels are not required when (1) red bags or red containers are used, (2) containers of blood, blood components, or blood products are labeled as to their contents and have been released for transfusion or other clinical use, and (3) individual containers of blood or other potentially infectious materials are placed in a labeled container during storage, transport, shipment or disposal. The warning label must be fluorescent orange or orange-red, contain the biohazard symbol and the word BIOHAZARD (see Figure 1), in a contrasting color, and be attached to each object by string, wire, adhesive, or another method to prevent loss or unintentional removal of the label.

As already indicated, the above preventive measures are intended to eliminate or minimize the risks of occupational exposure. In the event that an exposure occurs, however, certain procedures are required.

Table 2. Labeling Requirements

Item	No Label Needed if Universal Precautions Are Used and Specific Use of Container or Item Is Known to All Employees	Biohazard Label		Red Container
Regulated waste container (e.g., contaminated sharps containers)		X	or	X
Reusable contaminated sharps container (e.g., surgical instruments soaking in a tray)		X	or	X
Refrigerator/freezer holding blood or other potentially infectious material		X		
Containers used for storage, transport or shipping of blood		X	or	X
Blood/blood products for clinical use	No labels required			
Individual specimen containers of blood or other potentially infectious materials remaining in facility	X or	X	or	X
Contaminated equipment needing service (e.g., dialysis equipment, suction apparatus)		X plus a label specifying where the contamination exists		
Specimens and regulated waste shipped from the primary facility to another facility for service or disposal		X	or	X
Contaminated laundry	* or	X	or	X
Contaminated laundry sent to another facility that does not use Universal Precautions		X	or	X

*Alternative labeling or color coding is sufficient if it permits all employees to recognize the containers as requiring compliance with Universal Precautions

Figure 1. BIOHAZARD Symbol

What to Do if an Exposure Incident Occurs

The standard requires that the post-exposure medical evaluation and followup be made available immediately for employees who have had an exposure incident. At a minimum, the evaluation and followup must, at least, include the following elements:

- Document the routes of exposure and how exposure occurred.
- Identify and document the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law.
- Obtain consent* and test source individual's blood as soon as possible to determine HIV and HBV infectivity and document the source's blood test results.
- If the source individual is known to be infected with either HIV or HBV, testing need not be repeated to determine the known infectivity.

*If consent is not obtained, the employer must show that legally required consent could not be obtained. Where consent is not required by law, the source individual's blood, if available, should be tested and the results documented.

- Provide the exposed employee with the source individual's test results and information about applicable disclosure laws and regulations concerning the source identity and infectious status.

- After obtaining consent, collect exposed employee's blood as soon as feasible after the exposure incident and test blood for HBV and HIV serological status.

- If the employee does not give consent for HIV serological testing during the collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days.*

- Provide HBV and HIV serological testing, counseling, and safe and effective post-exposure prophylaxis following the current recommendations of the U.S. Public Health Servic

The employer must give the health care professional responsible fo the employee's hepatitis B vaccination and post-exposure evaluatio and followup a copy of the OSHA standard. The employer also mus provide to the health care professional evaluating the employee aft an exposure incident a description of the employee's job duties relevant to the exposure incident, documentation of the route(s) of exposure, circumstances of exposure, and results of the source individual's blood tests, if available, and all relevant employee medical records, including vaccination status.

Within 15 days after evaluation of the exposed employee, the employer must provide the employee with a copy of the health care professional's written opinion. The written opinion is limited to whether the vaccine is indicated and if it has been received. The written opinion for post-exposure evaluation must document that th employee has been informed of the results of the medical evaluatio and of any medical conditions resulting from the exposure incident that may require further evaluation or treatment. All other diagnose must remain confidential and not be included in the written report.

The requirements for the medical and training records are discusse in the next section on recordkeeping.

*If during this time, the exposed employee elects to have the baseline sample tested testing shall be done as soon as feasible

Recordkeeping

Employers also must preserve and maintain for each employee an accurate record of occupational exposure according to OSHA's rule governing access to employee exposure and medical records, *Title 29 Code of Federal Regulations*, Part 1910.20.

Under the bloodborne pathogens standard, however, medical records also must include the following information:

- Employee's name and social security number;
- Employee's hepatitis B vaccination status including vaccination dates and any medical records related to the employee's ability to receive vaccinations;
- Results of examinations, medical testing, and post-exposure evaluation and followup procedures;
- Health care professional's written opinion; and
- A copy of the information provided to the health care professional.

Medical records must be kept confidential and maintained for at least the duration of employment plus 30 years.

The bloodborne pathogens standard also requires employers to maintain and to keep accurate training records for 3 years and to include the following:

- Training dates,
- Content or a summary of the training,
- Names and qualifications of trainer(s), and
- Names and job titles of trainees.

Upon request, both medical and training records must be made available to the Director of the National Institute for Occupational Safety and Health (NIOSH) and to the Assistant Secretary of Labor

for Occupational Safety and Health. Training records must be available to employees or employee representatives upon request. An employee's medical records can be obtained by that employee or anyone having that employee's written consent. Also, if the employer ceases to do business, medical and training records must be transferred to the successor employer. If there is no successor employer, the employer must notify the Director, NIOSH, U.S. Department of Health and Human Services, for specific directions regarding disposition of the records at least 3 months prior to intended disposal.

HIV and HBV Research Laboratories and Production Facilities

In addition to other requirements of the standard, employers in research laboratories and production facilities engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV,* must ensure the following:

- Provide HIV and HBV **research laboratories** with a facility for hand-and-eye washing and an autoclave for decontaminating regulated waste.

- Provide HIV and HBV **production facilities** with work areas separated from unrestricted areas (corridors or other contiguous areas) within the building by two sets of self-closing access doors; with a ducted exhaust-air ventilation system; an autoclave near the work area for decontamination; a sink for hand washing that is foot, elbow, or automatically operated and is near the exit door; eye wash facility; and water-resistant, sealable surfaces of walls, floors, and ceilings.

- Decontaminate, autoclave, or incinerate all regulated waste before disposal.

- Keep doors closed when work involves HIV and HBV.

- Place contaminated materials in durable, leak-proof,

*This does not apply to clinical or diagnostic laboratories

appropriately labeled or color-coded, closed containers before removing them from the work area.

- Permit only authorized personnel in work areas and in animal rooms.

- Place proper hazard warning signs, incorporating the biohazard symbol, on access doors when potentially infectious materials or infected animals are present in the work areas (see Figure 2).

- Do not work with potentially infectious materials on an open bench. Use biological safety cabinets or other physical-containment devices.

- Install only certified biological safety cabinets and certify them annually thereafter or when moving them to another location within the facility.

- Wear appropriate personal protective equipment such as coats, gowns, smocks, and uniforms only in work areas and in animal rooms when handling other potentially infectious materials; and decontaminate clothing before laundering.

- Protect vacuum lines with high-efficiency particulate air filters and liquid disinfectant traps. Check routinely and maintain or replace, as necessary.

- Use needle-locking syringes or disposable syringe-needle units when injecting or aspirating potentially infectious fluids.

- Use hypodermic needles and syringes for parenteral injections and aspirations of fluids from laboratory animals and diaphragm bottles.

- Never bend, shear, replace in the sheath guard, or remove a used needle from the syringe following use.

- Use extreme caution when handling needles and syringes. Also, place used needles and syringes in a puncture-resistant container and decontaminate or autoclave before reuse, or disposal.

- Report all spills and accidents to the laboratory director immediately.

- Adopt a biosafety manual and periodically review and update it. Also, advise and require employees to read, follow, and practice the instructions.

- Use appropriate protective clothing or respirators when exposed to droplets, splashes, spills, or aerosols.

- Provide additional initial training on standard microbiological techniques and practices specific to the facility and the handling of human pathogens or tissue cultures to employees without previous experience and allow only employees with demonstrated experience and proficiency to work in these facilities.

Other Sources of OSHA Assistance

Consultation Programs

Consultation assistance is available to employers who want help in establishing and maintaining a safe and healthful workplace. Largely funded by OSHA, the service is provided at no cost to the employer. Primarily developed for smaller employers with more hazardous operations, the consultation service is delivered by state government agencies or universities employing professional safety consultants and health consultants. Comprehensive assistance includes an appraisal of all mechanical, physical work practice, and environmental hazards of the workplace and all aspects of the employer's present job safety and health program. No penalties are proposed or citations issued for hazards identified by the consultant.

For more information concerning consultation assistance, see the list of consultation projects listed at the end of this publication (see Appendix B).

Voluntary Protection Programs

Voluntary protection programs (VPP) and onsite consultation services, when coupled with an effective enforcement program,

BIOHAZARD

(Name of the infectious agent)

(Special requirements for entering the area)

(Name, telephone number of the laboratory director

or other responsible person.)

Figure 2. Sign for HIV/HBV Production Facilities

expand worker protection to help meet the goals of the OSH Act. The three VPPs—Star, Merit, and Demonstration—are designed to recognize outstanding achievement by companies that have successfully incorporated comprehensive safety and health programs into their total management system. They motivate others to achieve excellent safety and health results in the same outstanding way and they establish a cooperative relationship among employers, employees, and OSHA.

For additional information on VPPs and how to apply, contact the OSHA national, regional, or area offices listed at the end of this publication.

Training and Education

OSHA's Training Institute in Des Plaines, IL, provides basic and advanced courses in safety and health for federal and state compliance officers, state consultants, federal agency personnel, and private sector employers, employees, and their representatives.

OSHA also provides funds to nonprofit organizations, through grants, to conduct workplace training and education in subjects where OSHA believes there is a lack of workplace training. Current grant subjects include agricultural safety and health, hazard communication programs, and HIV and HBV. Grants are awarded annually, with a 1-year renewal possible. Grant recipients are expected to contribute 20 percent of the total grant cost.

For more information on grants, and training and education, contact the OSHA Training Institute, Office of Training and Education, 1555 Times Drive, Des Plaines, IL 60018, (708) 297-4810.

Finally, OSHA's area offices offer a variety of informational services, such as publications, audiovisual aids, technical advice, and speakers for special engagements. Each regional office has a bloodborne pathogens coordinator to assist employers.

Appendix A

The following statement of declination of hepatitis B vaccination must be signed by an employee who chooses not to accept the vaccine. The statement can only be signed by the employee following appropriate training regarding hepatitis B, hepatitis B vaccination, the efficacy, safety, method of administration, and benefits of vaccination, and that the vaccine and vaccination are provided free of charge to the employee. The statement is not a waiver; employees can request and receive the hepatitis B vaccination at a later date if they remain occupationally at risk for hepatitis B.

Declination Statement

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

_____ _____

Employee Signature Date

Appendix B

OSHA Consultation Project Directory

Consultation programs provide free services to employers who reques help in identifying and correcting specific hazards, want to improve the safety and health programs, and/or need further assistance in training and education. Funded by OSHA and delivered by well-trained professional staff of state governments, consultation services are comprehensive, and include an appraisal of all workplace hazards, practices, and job safety and health programs, conferences and agreements with management; assistance in implementing recommendations; and a followup appraisal to ensure that any require corrections are made. For more information on consultation programs, contact the appropriate office in your state listed below.

State	Telephone
Alabama	(205) 348-3033
Alaska	(907) 264-2599
Arizona	(602) 255-5795
Arkansas	(501) 682-4522
California	(415) 737-2843
Colorado	(303) 491-6151
Connecticut	(203) 566-4550
Delaware	(302) 577-3908
District of Columbia	(202) 576-6339
Florida	(904) 488-3044
Georgia	(404) 894-8274
Guam	(671) 646-9244
Hawaii	(808) 548-4155
Idaho	(208) 385-3283
Illinois	(312) 814-2339
Indiana	(317) 232-2688
Iowa	(515) 281-5352
Kansas	(913) 296-4386
Kentucky	(502) 564-6895
Louisiana	(504) 342-9601
Maine	(207) 289-6460
Maryland	(301) 333-4218
Massachusetts	(617)727-3463

Michigan	(517) 335-8250(H)
	(517) 322-1809(S)
Minnesota	(612) 297-2393
Mississippi	(601) 987-3981
Missouri	(314) 751-3403
Montana	(406) 444-6401
Nebraska	(402) 471-4717
Nevada	(702) 688-1474
New Hampshire	(603) 271-3170
New Jersey	(609) 292-0404
New Mexico	(505) 827-2885
New York	(518) 457-2481
North Carolina	(919) 733-3949
North Dakota	(701) 221-5188
Ohio	(614) 644-2631
Oklahoma	(405) 528-1500
Oregon	(503) 378-3272
Pennsylvania	(800) 382-1241
	(Toll free in State)
	(412) 357-2561
Puerto Rico	(809) 754-2171
Rhode Island	(401) 277-2438
South Carolina	(803) 734-9599
South Dakota	(605) 688-4101
Tennessee	(615) 741-7036
Texas	(512) 440-3834
Utah	(801) 530-6868
Vermont	(802) 828-2765
Virginia	(804) 786-6613
Virgin Islands	(809) 772-1315
Washington	(206) 586-0963
West Virginia	(304) 348-7890
Wisconsin	(608) 266-8579(H)
	(414) 521-5063(S)
Wyoming	(307) 777-7786

H-Health S-Safety

States with Approved Plans

Commissioner
Alaska Department of Labor
P.O. Box 21149
Juneau, AK 99801
(907) 465-2700

Director
Industrial Commission
of Arizona
800 W. Washington
Phoenix, AZ 85007
(602) 542-5795

Director
California Department of
Industrial Relations
455 Golden Gate Avenue
4th Floor
S. San Francisco, CA 94102
(415) 703-4590

Commissioner
Connecticut Department
of Labor
200 Folly Brook Boulevard
Wethersfield, CT 06109
(203) 566-5123

Director
Hawaii Department of Labor
and Industrial Relations
830 Punchbowl Street
Honolulu, HI 96813
(808) 548-3150

Commissioner
Indiana Department of Labor
1013 State Office Building
100 North Senate Avenue
Indianapolis, IN 46204-2287
(317) 232-2665

Commissioner
Iowa Division of Labor Services
1000 E. Grand Avenue
Des Moines, IA 50319
(515) 281-3447

Acting Commissioner
for Workplace Standards
Kentucky Labor Cabinet
1049 U.S. Highway, 127 South
Frankfort, KY 40601
(502) 564-3070

Commissioner
Maryland Division of Labor
and Industry
Department of Licensing
and Regulation
501 St. Paul Place, 2nd Floor
Baltimore, MD 21202-2272
(301) 333-4179

Director
Michigan Department of Labor
Victor Office Center
201 N. Washington Square
P.O. Box 30015
Lansing, MI 48933
(517) 373-9600

Director
Michigan Department of
Public Health
3423 North Logan Street
Box 30195
Lansing, MI 48909
(517) 335-8022

Commissioner
Minnesota Department of Labor
and Industry
443 Lafayette Road
St. Paul, MN 55155
(612) 296-2342

Director
Nevada Department of
Industrial Relations
Division of Occupational Safety
and Health
Capitol Complex
1370 S. Curry Street
Carson City, NV 89710
(702) 687-3032

Secretary
New Mexico Environment Dept.
Occupational Health and
Safety Bureau
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502
(505) 827-2850

Commissioner
New York Department of Labor
State Office Building
Campus 12-Room 457
Albany, NY 12240
(518) 457-2741

Commissioner
North Carolina Department
of Labor
4 West Edenton Street
Raleigh, NC 27601
(919) 733-7166

Administrator
Oregon Occupational Safety
and Health Division
Oregon Department of
Insurance and Finance,
Room 160
Labor and Industries Building
Salem, OR 97310
(503) 378-3272

Secretary
Puerto Rico Department of
Labor and Human Resources
Prudencio Rivera
Martinez Building
505 Munoz Rivera Avenue
Hato Rey, PR 00918
(809) 754-2119

Commissioner
South Carolina Department
of Labor
3600 Forest Drive
P.O. Box 11329
Columbia, SC 29211-1329
(803) 734-9594

Commissioner
Tennessee Department
of Labor
501 Union Building
Suite "A", 2nd Floor
Nashville, TN 37243-0655
(615) 741-2582

Administrator
Utah Occupational Safety
and Health
160 East 300 South
P.O. Box 5800
Salt Lake City, UT 84110-5800
(801) 530-6900

Commissioner
Vermont Department of Labor
and Industry
120 State Street
Montpelier, VT 05620
(802) 828-2765

Commissioner
Virgin Islands Department
of Labor
2131 Hospital Street
Box 890
Christiansted
St. Croix, VI 00840-4666
(809) 773-1994

Commissioner
Virginia Department of Labor
and Industry
Powers-Taylor Building
13 S. 13th Street
Richmond, VA 23219
(804) 786-2376

Director
Washington Department of
Labor and Industries
General Administration
Building
Room 334-AX-31
Olympia, WA 98504-0631
(206) 753-6307

Director
Department of Employment
Division of Employment Affairs
Occupational Safety and
Health Administration
Herschler Building
2nd Floor East
122 West 25th Street
Cheyenne, WY 82002
(307) 777-7786 or 777-7787

U.S. Department of Labor
Occupational Safety and Health Administration
Regional Offices

Region I
(CT,* MA, ME, NH, RI, VT*)
133 Portland Street
1st Floor
Boston, MA 02114
Telephone: (617) 565-7164

Region II
(NJ, NY,* PR,* VI*)
201 Varick Street
Room 670
New York, NY 10014
Telephone: (212) 337-2378

Region III
(DC, DE, MD,* PA, VA,* WV)
Gateway Building, Suite 2100
3535 Market Street
Philadelphia, PA 19104
Telephone: (215) 596-1201

Region IV
(AL, FL, GA, KY,* MS, NC,* SC,* TN*)
1375 Peachtree Street, N.E.
Suite 587
Atlanta, GA 30367
Telephone: (404) 347-3573

Region V
(IL, IN,* MI,* MN,* OH, WI)
230 South Dearborn Street
Room 3244
Chicago, IL 60604
Telephone: (312) 353-2220

Region VI
(AR, LA, NM,* OK, TX)
525 Griffin Street
Room 602
Dallas, TX 75202
Telephone: (214) 767-4731

Region VII
(IA,* KS, MO, NE)
911 Walnut Street, Room 406
Kansas City, MO 64106
Telephone: (816) 426-5861

Region VIII
(CO, MT, ND, SD, UT,* WY*)
Federal Building, Room 1576
1961 Stout Street
Denver, CO 80294
Telephone: (303) 844-3061

Region IX
(American Samoa, AZ,* CA,* Guam, HI,* NV,* Trust Territories of the Pacific)
71 Stevenson Street
Room 415
San Francisco, CA 94105
Telephone: (415) 744-6670

Region X
(AK,* ID, OR,* WA*)
1111 Third Avenue
Suite 715
Seattle, WA 98101-3212
Telephone: (206) 553-5930

*These states and territories operate their own OSHA-approved job safety and health programs (Connecticut and New York plans cover public employees only). States with approved programs must have a standard that is identical to, or at least as effective as, the federal standard.

Occupational Exposure to Bloodborne Pathogens

U.S. Department of Labor
Occupational Safety and Health Administration

OSHA 3127
1992

NCCA PUBLICATIONS

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OSHA REQUIREMENTS FOR BLOODBORNE PATHOGENS
Bloodborne Pathogens Exposure Control Plan
A Model for Child Care Centers
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ADA Job Descriptions for Child Care Centers
Technical Assistance Model
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Conyers (Atlanta), GA 30207-5275
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_____ Sample Job Descriptions - Americans with Disabilities Act

_____ Model Exposure Plan for Child Care Centers - Bloodborne Pathogens

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1029 Railroad Street
Conyers (Atlanta), GA 30207

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